

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-11. (canceled).

12. (new): Filtration structure (11) of a particulate filter for exhaust gases of an internal combustion engine of the type comprising:

- at least first and second filtration elements (15A, 15B), each filtration element being made of a ceramic material having an inlet face (21), a discharge face (23) and lateral faces (24), and comprising an assembly of adjacent inlet and outlet conduits separated by porous filtration walls (25) extending from the inlet face to the discharge face, the inlet conduits, open in the region of the inlet face and closed in the region of the discharge face, and the outlet conduits, open in the region of the discharge face and closed in the region of the inlet face, being arranged transposed, one first lateral face (24A) of the first filtration element and one second lateral face (24B) of the second filtration element are arranged opposite each other;

- a joint (17) for connecting the first and second lateral faces (24A, 24B) which extends between the faces, this joint (17) comprising a binding agent (41) and reinforcement means (43), characterized in that said binding agent is a ceramic cement, and in that the reinforcement means (43) comprises at least one mesh-like reinforcement element which has independent coherence and which comprises at least one active portion (45), which is generally of substantially planar form and embedded in said binding agent (41), the active portion being

produced from a metal material constitutes preferred axis for propagation of the thermal flux within the joint.

13. (new): Structure (11) according to claim 12, characterized in that each active portions (45) comprises a plurality of beams (47) which are arranged substantially parallel with a first direction (X-X').

14. (new): Structure (11) according to claim 13, characterized in that each active portions (45) comprises a plurality of cross-members (49) which connect the beams (47) and which are arranged substantially parallel with a second direction (Y-Y'), distinct from the first direction (X-X').

15. (new): Structure (11) according to claim 14, characterized in that the total volume of the apertures (51) delimited by the beams (47) and the cross-members (49) is greater than the total volume of the beams (47) and the cross-members (49).

16. (new): Structure (11) according to claim 12, characterized in that the reinforcement element (43) comprises an active portion (45C, 45D) opposite two adjacent faces (24C, 24D) of the filtration element, the active portions (25C, 25D) being connected to each other.

17. (new): Structure (11) according to any one of claims 12 to 16, characterized in that it comprises at least one cell (61) which comprises four filtration elements (15), and a common reinforcement element (43), having a sinuous shape, for the filtration elements (15), the common reinforcement element (43) comprising at least three successive active portions (45) which are arranged opposite adjacent faces (24) of the filtration elements (15) of the cell (61).

18. (new): Structure (11) according to claim 17, characterized in that it comprises at least first and second cells (61A, 61B), at least one active portion (45A) of the reinforcement element (43A) of the first cell (61A) being arranged opposite a face (24B) of a filtration element (15B) of the second cell (61B).

19. (new): Filtration structure (11) of a particulate filter for exhaust gases of an internal combustion engine of the type comprising:

- at least one first filtration element and at least two second filtration elements (15A, 15B), each filtration element being made of a ceramic material having an inlet face (21), a discharge face (23) and lateral faces (24), and comprising an assembly of adjacent inlet and outlet conduits separated by porous filtration walls (25) extending from the inlet face to the discharge face, the inlet conduits, open in the region of the inlet face and closed in the region of the discharge face, and the outlet conduits, open in the region of the discharge face and closed in the region of the inlet face, being arranged transposed, a lateral face (24B) of each one of said at least two second filtration elements being arranged opposite to a lateral face (24A) of said at least one first filtration element;

- a joint (17) for connecting said lateral faces (24A, 24B), which extends between said lateral faces, this joint (17) comprising a binding agent (41) and reinforcement means (43), characterized in that said binding agent is a ceramic cement, in that the reinforcement means (43) comprises at least one mesh-like reinforcement element which has independent coherence and which comprises at least one active portion (45), which is generally of substantially planar form and embedded in said binding agent (41), and in that the reinforcement

element (43) comprises active portions (45C, 45D) opposite two adjacent lateral faces (24C, 24D) of said at least first filtration element, the active portions (25C, 25D) being connected to each other.

20.(new): Structure (11) according to claim 19, characterized in that each active portions (45) comprises a plurality of beams (47) which are arranged substantially parallel with a first direction (X-X').

21. (new): Structure (11) according to claim 20, characterized in that each active portions (45) comprises a plurality of cross-members (49) which connect the beams (47) and which are arranged substantially parallel with a second direction (Y-Y'), distinct from the first direction (X-X').

22. (new): Structure (11) according to claim 21, characterized in that the total volume of the apertures (51) delimited by the beams (47) and the cross-members (49) is greater than the total volume of the beams (47) and the cross-members (49).

23. (new): Structure (11) according to claim 19, characterized in that the reinforcement element (43) is produced from a metal material.

24. (new): Structure (11) according to claim 19, characterized in that the reinforcement element (43) is produced from a material which degrades at temperatures greater than 150°C.

25. (new): Structure (11) according to any one of claims 19 to 24, characterized in that it comprises at least one cell (61) which comprises four filtration elements (15), and a common reinforcement element (43), having a sinuous shape, for the filtration elements (15), the common

reinforcement element (43) comprising at least three successive active portions (45) which are arranged opposite adjacent faces (24) of the filtration elements (15) of the cell (61).

26. (new): Structure (11) according to claim 25, characterized in that it comprises at least first and second cells (61A, 61B), at least one active portion (45A) of the reinforcement element (43A) of the first cell (61A) being arranged opposite a face (24B) of a filtration element (15B) of the second cell (61B).

27. (new): Filtration structure (11) of a particulate filter for exhaust gases of an internal combustion engine of the type comprising:

- at least first and second filtration elements (15A, 15B), each filtration element made of a ceramic material having an inlet face (21), a discharge face (23) and lateral faces (24), and comprising an assembly of adjacent inlet and outlet conduits separated by porous filtration walls 25 extending from the inlet face to the discharge face, the inlet conduits, open in the region of the inlet face and closed in the region of the discharge face, and the outlet conduits, open in the region of the discharge face and closed in the region of the inlet face, being arranged transposed;

- a joint (17) for connecting a lateral face (24A) of said first filtration element with a lateral face (24B) of said second filtration element, this joint (17) comprising a binding agent (41) and reinforcement means (43),

characterized in that the reinforcement means (43) comprises at least one mesh-like reinforcement element which has independent coherence and which comprises at least one active portion (45) which is generally of substantially planar form and embedded in said binding agent (41), and in that said binding agent is a ceramic cement,

the filtration structure being capable of withstanding a multitude of regeneration phases whilst retaining its mechanical strength and sealing with respect of the soot.

28. (new): Structure (11) according to claim 27, characterized in that each active portions (45) comprises a plurality of beams (47) which are arranged substantially parallel with a first direction (X-X').

29. (new): Structure (11) according to claim 28, characterized in that each active portions (45) comprises a plurality of cross-members (49) which connect the beams (47) and which are arranged substantially parallel with a second direction (Y-Y'), distinct from the first direction (X-X').

30. (new): Structure (11) according to claim 29, characterized in that the total volume of the apertures (51) delimited by the beams (47) and the cross-members (49) is greater than the total volume of the beams (47) and the cross-members (49).

31. (new): Structure (11) according to claim 27, characterized in that the reinforcement element (43) is produced from a metal material.

32. (new): Structure (11) according to claim 27, characterized in that the reinforcement element (43) is produced from a material which degrades at temperatures greater than 150°C.

33. (new): Structure (11) according to claim 27, characterized in that the reinforcement element (43) comprises an active portion (45C, 45D) opposite two adjacent faces (24C, 24D) of the filtration element, the active portions (25C, 25D) being connected to each other.

34. (new): Structure (11) according to any one of claims 27 to 33, characterized in that it comprises at least one cell (61) which comprises four filtration elements (15), and a common

reinforcement element (43), having a sinuous shape, for the filtration elements (15), the common reinforcement element (43) comprising at least three successive active portions (45) which are arranged opposite adjacent faces (24) of the filtration elements (15) of the cell (61).

35. (new): Structure (11) according to claim 34, characterized in that it comprises at least first and second cells (61A, 61B), at least one active portion (45A) of the reinforcement element (43A) of the first cell (61A) being arranged opposite a face (24B) of a filtration element (15B) of the second cell (61B).